USAWC STRATEGY RESEARCH PROJECT

NAVY/MARINE CORPS TACAIR INTEGRATION PLAN: TRANSFORMATION OR REORGANIZATION FOR THE MARINE CORPS IT'S THE STOVL IMPERATIVE

by

LIEUTENANT COLONEL FRANCIS P. BOTTORFF
United States Marine Corps

Colonel P. Halton
Project Advisor

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE **03 MAY 2004**	2. REPORT TYPE	3. DATES COVERED **-**
4. TITLE AND SUBTITLE **Navy/Marine Corps Tacair integration Plan Transformation or Reorganization**		5a. CONTRACT NUMBER 5b. GRANT NUMBER 5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S) **Francis Bottorff**		5d. PROJECT NUMBER 5e. TASK NUMBER 5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **U.S. Army War College,Carlisle Barracks,Carlisle,PA,17013-5050**		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S) 11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT
See attached file.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**		**25**	

ABSTRACT

AUTHOR: Lieutenant Colonel Francis P. Bottorff

TITLE: NAVY/MARINE CORPS TACAIR INTEGRATION PLAN: TRANSFORMATION OR REORGANIZATION. FOR THE MARINE CORPS IT'S THE STOVL IMPERATIVE

FORMAT: Strategy Research Project

DATE: 19 March 2004 PAGES: 25 CLASSIFICATION: Unclassified

The Navy/Marine Corps TACAIR integration plan is an aggressive, long-term initiative that will seamlessly meld the fixed wing tactical aviation assets of both the Navy and Marine Corps. If fully and successfully integrated the efficiencies gained could save billions over the next 15-17 years. The intent of this project is to fiscally and operationally review the planned integration and make change recommendations as appropriate.

TABLE OF CONTENTS

ABSTRACT ..... **III**

LIST OF TABLES ..... **VII**

NAVY/MARINE CORPS TACAIR INTEGRATION PLAN: TRANSFORMATION OR REORGANIZATION FOR THE MARINE CORPS IT'S THE STOVL IMPERATIVE **1**

ANTICIPATED RESULTS OF INTEGRATION **1**

HISTORICAL PRECEDENCE OF INTEGRATION **2**

BUDGET CONSIDERATIONS **3**

THE PROPOSED INTEGRATION PLAN **3**

REQUIREMENTS ANALYSIS **4**

PERSTEMPO/OPSTEMPO 4

PEACETIME COMMITMENTS 5

DEPLOYED TASK ORGANIZATION 5

THE SEA BASE AND SEA BASING **7**

UNCERTAIN FUTURE **8**

RECOMMENDATION **10**

ENDNOTES **15**

BIBLIOGRAPHY **17**

LIST OF TABLES

CHART-1: ORIGINAL TACAIR PLAN 12

CHART-2: REVISED TACAIR PLAN 12

NAVY/MARINE CORPS TACAIR INTEGRATION PLAN: TRANSFORMATION OR REORGANIZATION. FOR THE MARINE CORPS IT'S THE STOVL IMPERATIVE

The 2001 Defense Planning Guidance (DPG) directed the Department of the Navy (DoN) to:

> "… Conduct a comprehensive review to assess the feasibility of integrating all Naval Aviation force structure. Naval Aviation force structure must continue to be flexible, responsive, interoperable, and expeditionary forces that support the Combatant Commanders and joint forces. The integration of aviation capabilities should seek both effectiveness and efficiencies."

A study was co-sponsored by the Chief of Naval Operations (CNO) and the Commandant of the Marine Corps (CMC) to investigate Tactical Aviation (TacAir) integration feasibility and to further determine if efficiencies gained would "translate into a reduction of projected APN-1 expenditures."[1] Upon completion of the study and a comprehensive internal review conducted by both the Navy and the Marine Corps, a Memorandum of Understanding (MOU) was signed by the Secretary of the Navy (SecNav), the CMC and the CNO "to begin the process of achieving integration of naval tactical aviation."[2]

The initial study of "Naval Aviation integration" was limited to TacAir for fiscal and operational reasons . Navy and Marine Corps TacAir airframes, for integration and budgeting purposes, include fighter and attack fixed-wing aircraft, namely the F/A-18 C/D, AV-8B and the JSF Carrier (CV) Short Takeoff and Vertical Landing (STOVL) variants.[3] TacAir accounts for approximately 50% of the naval aviation budget and a disproportionate percentage of short term planned future expenditures with the procurement of both the FA-18 E/F and Joint Strike Fighter (JSF) programs.[4] Additionally, most of the airframes and missions of TacAir in the Navy and Marine Corps are closely related or even interchangeable.

ANTICIPATED RESULTS OF INTEGRATION

The expected results of the currently accepted TacAir Integration Plan will be the very efficient use of all available assets through the seamless integration of operational Navy and Marine TacAir squadrons into both services' deployment programs. The MOU's vision is a more effective, lethal, cohesive and affordable Naval fighting force.

The efficiency of seamless integration will theoretically allow for a reduction in total TacAir squadrons within the DoN. Additional savings are proposed through the reduction in Primary Aircraft Authorized (PAA) [5]. PAA reduction is made possible due to the introduction of the JSF

and the increased reliability and lethality it will provide. The proposals could save the DoN close to 35 billion dollars over the next 16-17 years.

Marine Corps TacAir has been the subject of intense scrutiny following every Major Theater War or military budget crunch during the last six decades. Although not being directly assailed during this review, the Marine Corps must continue to clearly articulate the value of Marine TacAir as a separate naval aviation entity and show how it effectively supports evolving Naval Operating Concepts within the limitations of the expected budget allocation.

Although the proposed integration plan is efficient and certainly cheaper, it raises just as many questions as it answers. Will the plan meet the operational needs of both the Navy and the Marine Corps? How will the procurement of two JSF variants work into the final plan? Are there alternatives that will stay within the given fiscal constraints, better meet the specific needs of each service, and better serve both the MAGTF commander and Regional Supported Combatant Commander?

HISTORICAL PRECEDENCE OF INTEGRATION

The Continental Congress established the United States Navy on 13 October 1775. Just a few weeks later, on 10 November 1775, a resolution was passed stating “two battalions of Marines be raised” as landing forces for the fleet. Since the days of their inception, the Navy and Marine Corps have been inextricably linked. For the most part, their service strategies and capabilities have been complimentary but not duplicative.

With the advent of naval aviation in 1910 came one area of operational crossover. Both naval services have aggressively pursued fixed-wing TacAir. The Department of the Navy, of which the Navy and the Marine Corps are co-equal services, has always been responsible for the acquisition of all Naval aircraft and, as such, the Navy and the Marine Corps have used many similar if not identical aircraft especially within TacAir. (The one notable exception was with the procurement of the AV-8B starting in the 1970s as a Marine specific program.) Within TacAir, the Marine Corps’ primary focus has always been supporting the Marine on the ground. The Navy has generally focused on defending the fleet and conducting air strikes that are more strategic in nature. When required, both services have adapted to the greater needs of the Naval Service. Marine squadrons have served aboard aircraft carriers in almost every major conflict since WWII. Navy pilots have supported Marine infantry in almost every conflict during the same period. During the past ten years, four Marine F/A-18 fighter squadrons have been dedicated to supporting Carrier Air Wings (CVWs) and have been fully incorporated into the CVW training and deployment schedules.

BUDGET CONSIDERATIONS

Both the Navy and the Marine Corps have ageing fleets of TacAir and non-TacAir aircraft that will be in need of replacement. Due to a procurement slump during the 1990s and a decision by the Marine Corps to skip replacing the tired fleet of TacAir aircraft with current generation fighters (such as the FA-18 E/F) in anticipation of the next generation JSF, there has resulted a staggering budget requirement in the coming years for Naval aviation procurement.[6]

The expected budget allocation for APN 1-4 dollars for FYs 05-20 in FY02$ is approximately 7.4 Billion dollars with 50% of APN 1-4 budget dollars historically allocated to TacAir programs.[7]

The net result was that the naval services had planned Program of Record expenditures for TacAir that exceeded projected budget allocations. During the bow wave years of FY 07-FY 12, projected expenditures for TacAir more than doubled the expected allocation of 3.6 billion dollars. The critical bow wave years result from the simultaneous procurement of four major TacAir programs; the F/A-18 E and F models and the JSF CV and STOVL models. The current vision of the "Ways" (number and type of aircraft required) was not matching the "Means" (dollars to buy airframes).

Two major assumptions were made when planning the makeup of the future force against budget constraints. First, the budget should remain relatively stable but certainly no significant increases could be expected. Second, the major deployment commitments for both services will continue as currently projected. To eliminate the bow wave and make the long-term programs fiscally possible, several possibilities were examined: (1) disestablish squadrons, (2) reduce the number of aircraft per squadron, (3) reduce the number of non-deploying (overhead) aircraft (pipeline, training squadrons, test and evaluation…), (4) increase the level of integration between the services.[8]

THE PROPOSED INTEGRATION PLAN

The MOU, signed by the SecNav, CNO and the CMC resulted in a more detailed Memorandum of Agreement (MOA) signed by the Service Deputies just days later. "Naval Aviation force projection will be accomplished by the increased integration of Marine Corps TacAir squadrons into Carrier Air Wings and the integration of Navy squadrons into Marine Aircraft Wings."[9] The specifics of the MOA include: retain (14) active Marine F/A-18 and (7) active AV-8B squadrons (no change), integrate (6) more active Marine F/A-18 squadrons into CV air wings, decommission (3) active Navy F/A-18 squadrons and integrate (3) F/A-18

squadrons into Marine Aircraft Wings (MAWs) to support Marine Unit Deployment Program (UDP) rotations, decommission (1) Navy and (1) Marine reserve F/A-18 squadron, reduce Navy F/A-18 squadron (PAA) from 12 to 10 unless they are identified to transition to F/A-18E/F or for supporting Marine UDP, and reduce PAA for CV dedicated Marine F/A-18 squadrons from 12 to 10. Marine and Navy UDP squadrons PAA will remain at 12. AV-8B PAA will remain at 16 with a review as part of the PR05 budget.[10]

"The Global-sourcing of each Service's warfighting requirements from the pool of non-deployed DoN aircraft"[11] ensures a more efficient use of all assets. Because of the more efficient use of all DoN squadrons, the JSF procurement plan was reduced to 680 aircraft from 1089 and the F/A-18E/F purchase was reduced to 460 from 548. The end result should be planned expenditures being more closely aligned with budget expectations while realizing recouped savings of approximately $30-35 billion through 2020.

REQUIREMENTS ANALYSIS

How many TacAir units are really required to meet the global presence requirements the Naval Services are fulfilling and expect to be required to continue to fill? To analyze the requirement you have to look at both the Personnel Tempo and the Operational Tempo (PERSTEMPO/OPSTEMPO) guidelines and the presence requirements of each Service.

PERSTEMPO/OPSTEMPO

"For scheduling purposes, a nominal deployment length of six months and a minimum turn around ratio of 2:1 (12 months) will be used."[12]

The above guidance from the MOA leads to a minimum of three TacAir units for each rotational deployment or a 3:1 construct. When studied closer, the 3:1 construct is difficult to maintain. The average deployment length for both Carrier Battle Groups (CVBGs)[13] and Amphibious Ready Groups (ARGS) / Marine Expeditionary Units (Special Operations Capable) (MEUSOC)[14] has historically been approximately seven months instead of the predicted six months. The downside of the seven month deployment is that another deployment is only 11 months away. The situation is a bit trickier than it seems. The deploying units detach (chop)[15] from their parent or permanent unit and attach for Operational Control (OPCON) to their respective deploying headquarters six to nine months prior to deployment and are not reattached to their parent unit until 1 month post deployment. [16] When detached for OPCON to a deploying headquarters, each unit is expected to be fully trained in their core competencies and to have the appropriate qualification/certification credentials at that time. During the OPCON period the unit's force structure is generally frozen and no major personnel changes

are encouraged. The major influx and efflux of personnel (aircraft maintainers and pilots) occurs during the inter-deployment period.

In the worse case scenario, a unit will chop OPCON to a deploying headquarters 9 months prior to a deployment. After completing pre-deployment workups that involve a significant amount of time at sea, the composite unit[17] deploys for six to seven months. Upon return, the composite unit maintains a ready status for real world contingency commitments for 1 month prior to releasing subordinate units back to their parent commands for the inter-deployment period. This accounts for 17 months of an 18-month cycle. Units then replace approximately 30% of their personnel and prepare to chop back to a deploying headquarters for pre-deployment training within 30 days of being released from the previous deployment commitment.

The 3:1 unit to deployment ratio construct is considered the minimum for fundamental reasons. Even under ideal conditions, the inter-deployment training period is still less than 90 days which does not provide a unit adequate time to organize and train to maintain a sustainable experience base for continued rotational deployments. Something other than a 3:1 ratio, and probably closer to a 4:1 ratio, is required to ensure a safe, effective and sustainable force.

PEACETIME COMMITMENTS

The Navy and the Marine Corps will continue to focus on maintaining adequate forces to meet their global presence requirements. During peacetime operations, the Navy's and Marine Corps' TacAir communities provide forces to fill multiple global requirements. Historical sustained rotational commitments have included three CVBGs and three ARGS being simultaneously forward deployed for credible presence in the Western Pacific, the Mediterranean and the Arabian Gulf. The Marine Corps has one air group forward deployed to Iwakuni, Japan to cover the Western Pacific UDP. UDP rotations to MCAS Iwakuni should remain stable and predictable into the foreseeable future. The makeup and capabilities of the sea-going platforms may undergo significant improvements in the near to mid future. For a future Marine Air/Ground Task Force[18] (MAGTF) commander to be able to directly leverage these improvements, the Marine Corps must make the proper structure and procurement decisions now.

DEPLOYED TASK ORGANIZATION

The Naval services have recently instituted new task organized units to better meet the strategic requirements of the 21st Century. The "Carrier Strike Group" (CSG) is built around the

former CVBG. Like the CVBG, each CSG will deploy with one CV having one carrier air wing embarked. In addition to the CV, the CSG will typically include a cruiser (CG), two guided-missile destroyers (DDGs), an attack submarine (SSN), and a fast combat support ship (T-AOE).[19] Each deployed air wing shall have four TacAir squadrons. The four squadrons will be composed of the following: One squadron each of FA-18Es and FA-18Fs for a total of 24 FA-18 aircraft, and two JSF squadrons of 10 airframes each for a total of 44 TacAir aircraft on each deployed CV.[20]

The Expeditionary Strike Group (ESG) is an upgrade of the ARG. The ESG will include the standard three ship ARG complement of one L-Class carrier (LHA/LHD) one Dock Landing Ship, one Amphibious Transport Dock (LPD) along with the added striking power of one CG, two DDGs, and an SSN. The ARGs striking capability was generally limited to a six plane harrier detachment, but with the addition of the four ships usually associated with a Surface Action Group, the ESG will arrive in theater with tremendous flexibility and striking power.

The Marine Corps TacAir commitment for the Korean Contingency UDP is sourced through the 1st MAW in Okinawa, Japan. The TacAir units are a combination of permanently forward deployed/Permanent Change of Station units and rotational units based in the continental United States.

To meet expected CSG requirements, the Navy intends to maintain 12 aircraft carriers sourced by 10 carrier air wings. One Carrier is permanently forward deployed and home ported in Japan and has one carrier air wing permanently stationed in Atsugi, Japan and dedicated to its support. The other nine carrier air wings provide support on a rotational basis to support the two deployment requirements for the Mediterranean and the Arabian Gulf. The deployment tempo for the rotational air wings ends up being just over the optimum 4:1 ratio. With four TACAIR squadrons required for each air wing, forty squadrons are required to meet the predicted deployment requirements.

Fulfilling ESG requirements will create a myriad of problems as the Marine Corps transitions to the JSF. There are seven Marine Expeditionary Unit (MEU) headquarters dedicated to fulfilling the ESG global presence commitments. One MEU headquarters is permanently stationed in Okinawa, Japan but, unlike the carrier air wing in Atsugi, the AV-8B squadrons sourcing all MEU TacAir detachments are stationed within the Continental United States (CONUS).

The other six MEUs are split with three stationed on each coast, with at least one from each coast continually forward deployed to either the Mediterranean or the Arabian Gulf region. The net result is that in any 18-month period, there is a requirement to support nine MEU (SOC)

Aviation Combat Elements (ACEs) with TACAIR units. Seven Harrier squadrons are currently sourcing this nine MEU commitment. The TACAIR integration plan currently maintains the seven Harrier squadrons at 16 aircraft each and will review AV-8B PAA reduction in future budgets. Current Harrier squadrons are designed to have the ability to be split into two separate deployable units, a squadron (-) of ten aircraft and a detachment of six aircraft. Training and Readiness manuals require detachments to be fully qualified for sea-based operations and for the squadron (-) to be qualified for land based operations. The experience and training required for two sea-based Harrier detachments significantly exceeds the requirements for land-based operations. The seven Harrier squadrons chop detachments of six aircraft to a MEU approximately nine months prior to a deployment where they remain until one month following the deployment. The squadrons (-), which do not normally participate in the routine deployment cycle, continue to prepare for the next MEU cycle and for any major contingency operations that occur. With the introduction of the JSF the plan is to increase PAA to 20 aircraft per squadron in the 7 squadrons that currently support the MEUs.

The continual chopping and reintegrating of detachments is a disruptive event for a unit. Within three months of reintegrating a returning detachment from a MEU (SOC), an AV-8Harrier squadron must send the next detachment back to another MEU. The pilots and maintenance personnel you detach to the MEU have been the heart of the squadron for the last 18 months but are required to give the deploying detachment the qualifications and certifications it requires. What remains of the squadron (-) will reintegrate with the returning detachment after the normal post deployment personnel movements. The squadron commanding officer then begins to build and train the new team which will comprise the next MEU detachment. With the integration of the JSF, it would be very beneficial to restructure the squadrons to deploy as units with a normal inter-deployment training cycle.

THE SEA BASE AND SEA BASING

The next generation CV, as mentioned earlier, will have basically the same design characteristics and size and will be capable of carrying a comparable number of tail hook (non-STOVL) aircraft as today's carriers. L-Class Amphibious carriers are in a different situation. Several options are under review to replace the last four Tarawa class LHAs due to retire between 2012-2015 at a rate of one per year. The future L-Class carrier (LHA (R)) will certainly be slightly larger and have additional flight deck and vehicle storage space. The LPDs are also being replaced with a significantly upgraded and expanded model. The additional deck space associated with the LPD-17 class Landing Assault Ship being introduce in FY 2005 will provide

ample space for a MEU to routinely deploy with a full complement of MV-22s and up to10 JSFs.[21]/[22] Intended to round-out the future amphibious force is the Maritime Propositioning Force of the future (MPF (F)). The vision for the MPF (F) is to have capabilities which far exceed those associated with the current MPF force. The MPF (F) should be capable of at sea arrival and assembly of units as well as direct support of the assault echelons of the Amphibious Task Force (ATF). [23] The MPF (F) is envisioned to have a significant tilt rotor and rotary wing operational capability.

When the improved capabilities of the future amphibious task force are looked at on the macro scale it is evident that the vision of the future amphibious force includes the ability to operate and sustain a robust rotary wing and STOVL fixed-wing Aviation Combat Element. This robust force will be required to support the MAGTF commander as the amphibious sea-base continues to grow in importance.

UNCERTAIN FUTURE

With improvements in ballistic missile technology and the political uncertainty associated with many parts of the world, deploying units to major fixed airbases may be militarily risky or politically unacceptable. Future enemies will strive to make the use of ports and major airfields untenable. Operation Iraqi Freedom demonstrated that even friendly democracies may chose to deny US forces access on or through their sovereign territory due to internal political concerns or disagreement over the U.S. policy. Marine Corps STOVL TacAir may be the only tactical air assets the MAGTF commander will have available under his operational control. Joint Publication 0-2 Unified Action Armed Forces states:

> The MAGTF commander will retain OPCON of organic air assets. The primary mission of the MAGTF aviation combat element is the support of the MAGTF ground combat elemental.

The Marine Corps has maintained this special relationship between its ground and air forces and has been recognized by the other Services as deserving special status because of Marine reliance on fully integrated combined arms. For Marine aviation units that are part of the carrier strike group, no such guarantee exists. If the MAGTF commander believes that he requires sorties from the CV based Marine squadrons he will have to request them through the Joint Forces Air Component Commander in competition with other Services or coalition forces.

Operation Iraqi Freedom was also a tremendous example of support of the land-based MAGTF commander from sea-based units under his operational control. Third Marine Aircraft Wing (3d MAW), as the Aviation Combat Element for I Marine Expeditionary Force, had almost half of its TacAir aircraft embarked on L-Class Amphibious ships. There were seven large deck

amphibious ships in the Area of Operations. Two of the amphibious ships had the normal complement of six harriers and were associated with deployed MEUs. Two other Amphibious Ships, the USS Bataan (LHD-5) and the USS Bonhomme Richard (LHD-6) were dedicated to fixed wing V/STOL operations as "Harrier Carriers." The two Harrier Carriers each had two Marine Attack Squadrons (VMAs) onboard for a total of 24 AV-8B Harriers on each ship.[24] The remainder of the TacAir assets assigned to 3rd MAW were land-based at a major airbase in Kuwait. Although the U.S. has maintained a large technological advantage in air defense or anti-missile technology, a single Weapon of Mass Destruction (WMD) impact at that single airfield would have had a devastating effect on the MAGTF ACE as well as U.S and coalition TacAir. Additionally, Harriers in Operation Iraqi Freedom operated from both improved roads and austere forward bases that were not suited to non-V/STOL carrier aircraft. The STOVL JSF will have 10 times the number of worldwide basing options that conventional fixed wing aircraft have available.[25]

The TacAir integration process involves short and long term risk for both the Navy and Marine Corps. First, reducing the PAA and number of squadrons, combined with the integration of units prior to the introduction of the JSF, incurs operational risk. The operational performance of legacy airframes such the F/A-18 and AV-8B are far inferior to the expected performance and sortie generation rates of the JSF. Reducing both the size and number of units will result in a situation where in a major theater war situation, there will be less tactical aircraft available for deployment thus, a decrease of total combat sorties available. The PAA/unit reduction is purely a short term cost cutting decision and may be counter-balanced through improved business practices and targeted funding to improve readiness and training while legacy airframes are phased out. If readiness is properly funded the risk should be manageable and acceptable to help insure the continued procurement of the JSF.

The first phase of increased integration commences in 2003 and should be completed prior to 2008. During the first phase, the Marines will integrate four F/A-18 squadrons into CVW rotations. Concurrently, the Navy will integrate three F/A-18 squadrons into the Marine UDP rotation and retire one F/A-18 squadron. This is seemingly a zero sum game for the Navy and a short-term loss of one available unit for a Marine surge requirement.

The longer-term risk comes with the decommissioning of the two active Navy squadrons and the two reserve squadrons, one from each Service, combined with the introduction of the JSF. The Navy and Marine Corps are both dedicated to two different variants of the JSF. The Marines are dedicated to an all STOVL force. The STOVL variant can operate from L-class ships, small or large airfields or even roads. It is more expeditionary as a result of the

expanded basing options that come with the STOVL capability. The Navy is dedicated to a CV variant which is quite capable but less expeditionary with operations being limited to CVs or major airfields. Further, both Services have tentatively agreed that:

> "Those JSF aircraft embarked in CVWs would be CV-JSF unless the demonstrated performance of the STOVL-JSF mirrored that of the CV-JSF in range, endurance and payload and the flight deck impact was mitigated." [26]

Not even the most optimistic observer believes that performance of both variants will be identical. The Operational Requirements Documents (ORD) for each version are drastically different. The expected Key Performance Parameters [27] of the STOVL version will not match those of the CV version and are not intended too. The CV version has a combat radius and bring back capability[28] which is 30% greater than the STOVL version.

Prior to any squadron decommissioning occurring, the final JSF mix needs to be finalized to ensure the Marine Corps will not be forced to support CV deployments at the expense of it's MAGTF requirements.

RECOMMENDATION

The Navy and Marine Corps have a very successful and close working relationship and there is no doubt that this relationship should and will continue. The TacAir Integration Plan, as it is currently written, will lock each Service into an inflexible plan that creates winners and losers. The plan insures a parochial effort by each Service to affect the final JSF CV/STOVL mix and almost guarantees inter-service infighting in the coming years. Both Services have touted the Integration Plan as a transformational change. The plan may constitute evolution but certainly not strategic, operational or tactical transformation. Both services have made adjustments to the way in which they will accomplish their missions (ways) so as to align with fiscal realities (means) without an equal level of attention to the long-term effects on mission accomplishment (ends). Under the current plan, the Marine Corps will retain more units and more force structure but may end up the operational loser**.**

The Marine Corps has continued to meet its required rotational deployments and other contingency requirements using its non-deployed forces. Marine F/A-18s have deployed from CONUS to Europe to support operations in the Balkans. A Marine Harrier squadron deployed to Afghanistan for one year to provide TacAir support. The TacAir Integration Plan provides for rapidly deploying Navy or Marine non-deployed squadrons to support contingencies, but given the risks associated with unknown future international political partnerships, the flexibility of the STOVL JSF is better suited to provide a sea or land-based contingency response force. The

procurement plan for the Naval services for aircraft above the minimum CV requirements should come in the form of STOVL JSF.

The Navy's desire to maintain a pure tail hook TacAir force aboard its CVs is understandable. The integration of dissimilar operating aircraft around a carrier is difficult but not impossible. Harriers have intermittently trained on CVs during the past 15 years but have never been fully integrated into a normal CV based deployment with full operations tempo. The CVWs should normally be comprised of CV JSFs but train to fully integrate the STOVL JSFs for surge or contingency operations. The ability to integrate Navy and Marine Corps squadrons into CVWs is admirable but what it really shows is a shortfall within the Navy to equip its own CVWs. The future Naval TacAir plan should seek interdependence not just integration. The current plan is to fill ten CVWs with Navy and Marine Corps TacAir squadrons. The Navy has one CVW dedicated to manning its one permanently deployed carrier that serves as a "ready" CSG for use in the Western Pacific. The other CVWs supporting the east and west coast deployment programs could be reduced by one CVW. The result would be 8 CVWs on a 4:1 rotation and one CVW permanently home ported abroad. All CVWs should be structured with enough Navy squadrons, flying CV variant JSFs, to fully support carrier rotations.

The Marine Corps should restructure its force to meet expected peacetime deployment requirements and retain squadrons to fulfill contingencies. There are currently seven AV-8B squadrons supporting MEU (SOC) rotation commitments. The present plan is to transition those seven squadrons into 20-plane STOVL JSF squadrons. With the ability to deploy ten-plane JSF squadrons with future Expeditionary Strike Groups, the Marine Corps should transition to twelve, ten-plane JSF squadrons to replace the seven harrier squadrons and support the nine MEUs on a 4:1 rotation. The Marine Corps should continue to source the Iwakuni UDP with Marine STOVL JSF squadrons. With one squadron permanently based in Iwakuni, eight US based units would be required to source the other two rotational unit requirements to Iwakuni. The three Marine reserve TacAir units should be STOVL JSFs. Three additional STOVL JSF squadrons should be added to account for minor contingency, land or sea-based surge requirements, without the total disruption of the OPSTEMPO plan.

TacAir integration is a short-term fix and should be looked upon in that manner. The long-term solution is to properly size and equip each naval force to cover their missions and continue to integrate units on an as needed basis. Integration of Navy/Marine units will always be possible to cover surge requirements for the CVW, MAGTF or Joint force. The current TacAir Integration Plan shown in Chart-1 enabled the reduction of the total strike fighter procurement from 1637 to 1140 which is composed of 460 F/A-18E/F and 680 JSF.

Navy	# Squadrons	PMAA	Deploying Total	Overhead	Total
F/A-18 E	10 active	12	120	110	230
F/A-18 F	10 active	12	120	110	230
CV-JSF	13 active/2 reserve	10	150	110	260
Marine Corps	**# Squadrons**	**PMAA**	**Deploying Total**	**Overhead**	**Total**
STOVL-JSF	21 active/3 reserve	10 or 20	310	110	420
Total			**Deploying Total**	**Overhead**	**Grand Total**
			714	426	1140

CHART-1: ORIGINAL TACAIR PLAN

A revised non-integrated plan would still meet the needs of both the Navy and the Marine Corps. The Navy would reduce the force by one Carrier Air Wing but fully source the nine remaining carrier wings with Navy Squadrons. This would mean that the Navy could further reduce the F/A-18 E/F procurement by two squadrons but would have to add an additional three JSF squadrons to have the 36 TacAir squadrons(18 F/A-18 E/F and 18 CV JSF) required to source nine CVWs, the same amount of TacAir units before TacAir integration. The Marine Corps would gain six squadrons through restructuring but should be able to source the squadrons from the same procurement plan. The Marine Corps would stand down one additional reserve squadron due to the additional flexibility to handle contingencies with active units. The endstate is a non-integrated and more flexible force, which is better situated to serve the requirements of both Services . Although the total strike force numbers are slightly higher 1164 vs 1140 the cost will be recouped with of the reduction of one CVW. In addition to reducing two F/A-18 E/F squadrons and the associated overhead aircraft, other CVW aircraft could also be reduced; 4 EA-6B, 4 E-2C, 4 S-3B and 8 H60s.

Navy	# Squadrons	PAA	Deploying Total	Overhead	Total
F/A-18 E	9 active	12	108	104	212
F/A-18 F	9 active	12	108	104	212
CV-JSF	18 active/2 reserve	10	220	110	330
Marine Corps	**# Squadrons**	**PAA**	**Deploying Total**	**Overhead**	**Total**
STOVL-JSF	28 active/2 reserve	10	300	110	410
Total			**Deploying Total**	**Overhead**	**Grand Total**
			620	600	1164

CHART-2: REVISED TACAIR PLAN

The integration of TacAir isn't necessary to achieve the operational requirements of the Naval Services within the given budget constraints. The revised plan is better suited to meet the unique operational needs of the two services. Each service will retain its individual culture and retain the ability to globally source war fighting requirements as required.

The Marine Corps will still be able to provide additional STOVL units to CVs for surge operations, but will also be better situated to surge additional squadrons to L-class carriers and land-based expeditionary sites. The Naval Services will be better suited, either ashore or afloat, to support the Joint Force Commander.

WORD COUNT= 5182

ENDNOTES

[1] Whitney, Bradley & Brown, Inc. *Navy-Marine Corps Aviation Integration Final Report* (Vienna, VA: Whitney, Bradley & Brown, Inc) May 2002. ii

[2]Gordon R. England, James L Jones, V. E. Clark, "*Navy/Marine Corps TacAir Integration*", Memorandum of Understanding Between Secretary of the Navy and Commandant of the Marine Corps and Chief of Naval Operations, Washington D.C.

[3] Examples of non-TacAir aircraft include helicopters, P-3 anti-submarine and other support aircraft.

[4] Whitney, 4

[5] Primary Aircraft Authorized is the total number of aircraft allotted for each squadron. When considering the total number of airframes to purchase you must include the airframes for each squadron plus overhead/ pipeline aircraft. Overhead/pipeline aircraft include training squadrons, test aircraft, aircraft under modification at depot level maintenance etc.

[6]Robert Walsh, "*Naval TacAir Integration: Capabilities-Based Relevance*" Marine Corps Gazette, May 2003. 39

[7] Whitney, 4

[8] Walsh, 39

[9] W. L. Nyland and D.V. McGinn,., "*Department of the Navy Tactical Aircraft Integration* ," Memorandum of Agreement between deputy Chief of Naval Operations (Warfare Requirements and Programs) and Deputy Commandant for Aviation, United States Marine Corps, Washington D.C. 16 August 2002. Cited hereafter as DoN MOA

[10] Ibid

[11] Walsh, 40

[12] DoN MOA, 3

[13] Carrier Battle Group (CVBG). The "V" is a symbol for "fixed-wing" and is also used in Fighter Squadron (VF), or Marine Attack Squadron (VMA).

[14] MEU (SOC). MEUs are certified as Special Operations Capable (SOC) during the pre-deployment training phase prior to deployment.

[15] The term "chop" is service slang for Change of Operational Control (Chop) used to describe the event of detaching a unit, or part of a unit such as a detachment, from the parent command to another command.

[16] Don MOA, 2

[17] A composite unit is one that has been augmented by other units. The Marine Expeditionary Units' (MEUs) Aviation Combat Element (ACE) is normally comprised of a single

Marine Medium Helicopter Squadron (HMM) which is augmented by detachments from a Marine Heavy Helicopter Squadron (HMH), Marine Light Attack Squadron (HMLA) and a Marine Attack Squadron (VMA) and is considered a "composite squadron".

[18] A Marine Air Ground Task Force (MAGTF) is a task organized unit of varying size that normally includes a Headquarters element, a Ground Combat Element (GCE) , an Aviation Combat Element (ACE) and Combat Service Support Element (CSSE).

[19] Vern Clark, and Michael Hagee "Naval Operating Concept for Joint Operations," 8

[20] DoN MOA, 2

[21] Michael W. Hagee, "*Marine Corps Concepts and Programs 2003* ," 46

[22] David Robinson, "*TacAir Integration Must Optimize JSFs*" Proceedings, December 2003, 53

[23] Hagee, 50

[24] The total numbers of Harriers was limited to 24 because of ship weight bearing limitations.

[25] Robinson, 55

[26] Whitney, 8

[27] Jack Hudson "*JSF Program Brief*" available from http://JSF.Mil/Program/Briefings/JSF_Program_brief.pdf; Internet. Accessed 09 March 2004

[28] "Bring back capability" is the ability to land on the ship with a certain amount of ordnance on the aircraft. Due to an aircraft's engine performance or maximum landing weight restrictions, an aircraft may not be able to land with all the ordnance it took off with. This is a critical factor in vertical landing calculations for V/STOL aircraft.

BIBLIOGRAPHY

Clark, Vern, and Michael Hagee "*Naval Operating Concept for Joint Operations"*

England, Gordon R., James L Jones, V. E. Clark, "*Navy/Marine Corps TacAir Integration*", Memorandum of Understanding Between Secretary of the Navy and Commandant of the Marine Corps and Chief of Naval Operations, Washington D.C.

Hagee, Michael W. "*Marine Corps Concepts and Programs 2003*"

Hudson, Jack. "*JSF Program Brief*" available from http://JSF.Mil/Program/Briefings/JSF_Program_brief.pdf; Internet. Accessed 09 March 2004

Phillips, Gary Dr., Major Eric Damm, Dr Tom Bowditch, Anton Jareb, Robert Benbow "*Marine Aviation Requirements Study*: Summary Report" Alexandria, VA. August 2001.

Nyland, W.L and D.V. McGinn, "*Department of the Navy Tactical Aircraft Integration*," Memorandum of Agreement between Deputy Chief of Naval Operations (Warfare Requirements and Programs) and Deputy Commandant for Aviation, United States Marine Corps, Washington D.C. 16 August 2002.

Robinson, David, "*TacAir Integration Must Optimize JSFs*" Proceedings, December 2003, 52-55.

Walsh, Robert, "*Naval TacAir Integration: Capabilities-Based Relevance*" Marine Corps Gazette, May 2003., 37-43.

Whitney, Bradley & Brown, Inc. " *Navy-Marine Corps Aviation Integration Final Report*," Vienna, VA. May 2002.